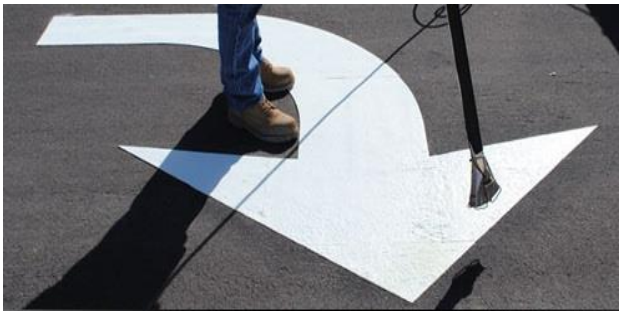
North Carolina Department of Transportation
Transportation Program Management Unit - Value Management
Innovative Technologies and Products Awareness Report
May 1, 2019

PRODUCT HIGHLIGHT – Preformed Thermoplastic Markings

Thermoplastic pavement marking is a type of pavement marking material used on roads that is typically composed of plastic, pigments, packing materials and glass beads to provide thick, durable, and reflective roadway markings. When placed on the roadway surface, the markings are not flush with the surface, which makes them susceptible to snow plows. Therefore, this type of material is most often used in warmer climates. Thermoplastic paint is originally produced as a powder. For road applications, it is heated to approximately 400 °F causing it to liquify and allowing the material to be applied to the pavement surface. This is often accomplished using a hand-pushed cart (shown in the image to the right). This cart can also be used to apply characters such as arrows and words.

Thermoplastic markings being applied by cart – image from Google



Preformed thermoplastic arrow bonded to pavement using a torch – image from Google

Recently, a secondary option for placing thermoplastic has become available. Thermoplastic lines and characters are being pre-made – known as preformed thermoplastic markings. These preformed markings can be placed by hand and then bonded to the pavement using a handheld torch. These premade materials are convenient for maintenance operations by avoiding the added equipment. These preformed markings are ready for traffic after approximately 15 minutes. There are currently three preformed thermoplastic marking products approved on the Approved Products List and have been used recently on US 64 in Knightdale.

PRODUCT INNOVATION – Durisol Precast Noise Barrier

Noise barriers are placed adjacent to highways to reduce traffic noise for nearby communities in locations that warrant one after a noise study. In North Carolina, noise barriers are typically made of concrete and reflect noise away from the protected area. In certain situations, it is more beneficial to have barriers that absorb the sound rather than reflect. These situations include locations where barriers run parallel on both sides of the highway, or if there is a reflective retaining wall on the opposing side. Absorptive barriers are successful by being porous at the surface and made up of a sound-dampening material.

Durisol's Noise Barrier cast in a brick pattern

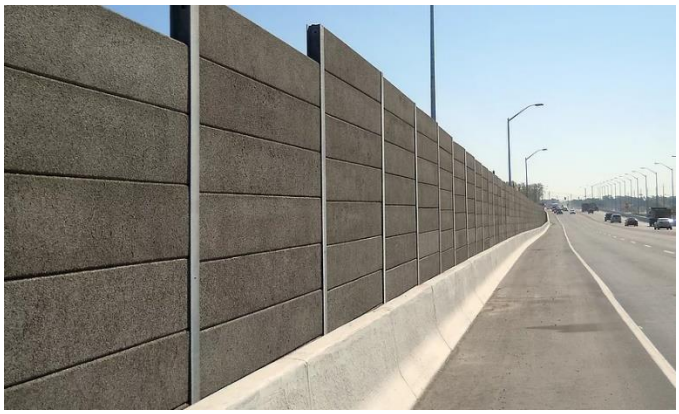


Image of Durisol's Precast Noise Barrier from their website

Durisol's Precast Noise Barrier, manufactured in Canada and Virginia, is an absorptive noise barrier that uses shredded wood chips mixed with Portland cement to create the desired porous sound-dampening properties. This lightweight barrier is created in three layers, with the outside layers composed of Portland cement and wood chip blend. The inside layer has concrete and steel reinforcement bars providing necessary structural strength. Durisol's Precast Noise Barrier can be cast with various designs and be stained to match the Department's desired aesthetic look. It is currently Accepted for Field Trial Use on the Approved Products List with the product number NP18-8093 and is expected to be placed and evaluated on project I-5111 along I-40 in Wake and Johnston Counties. For more information, please visit: https://www.durisol.com/